Improving students' knowledge and skills using an innovative Pecha Kucha presentation assignment in a History of Economic Thought class

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In this article, the author considers the motivational power in allocating to groups of students in a History of Economic Thought (HET) course a new formative Pecha Kucha (PK) presentation assignment on one economic school of thought. Following this, each group then posted its PK on the Moodle course forum and commented on PK presentations by other groups. The assignment aimed to encourage students to engage more with technology; to learn on their own and with each other and from each other; to acquire abstracting skills; to address the breadth rather than only the depth of learning; and to make use of the brevity of PK in shortening the long history of economics. The author weighs up the advantages and limitations of this assignment and reflects on its applicability to other courses.

Keywords: Pecha Kucha; PowerPoint; education; history of economic thought; economics education; multimodal teaching

JEL codes: A20; A22; B0; B40

1. Introduction

This paper analyses the outcomes of an innovative Pecha Kucha[1] (PK) formative assignment that I experimented with in my history of economic thought (HET) class, as I aimed to give greater breadth to students' learning and to feed forward to their summative assignments. In this assignment, I asked groups of students to design and prepare a PK presentation on one economic school of thought that I had allocated in advance. Each group was then to post it on the Moodle course forum and comment on two other PK presentations. I intended with this assignment to encourage students to engage more with technology; to learn on their own and with each other and from each other; to acquire abstracting skills[2]; to have a helicopter view of the different theories in order to address the breadth rather than the depth of learning; and to make use of the brevity of PK in shortening the long history of economics, which begins with the writings of the ancient Greek philosophers and extends to theories of contemporary economists. In the HET courses that I teach[2], I emphasise both the depth and breadth of learning. Deep learning requires students to explore deeply one concept or theory and test it through their summative research papers, in addition to evaluating and criticising different economic theories through summative examinations. As I have mentioned, my focus on enhancing breadth – not just depth – of learning led me to propose an assignment which would achieve student

understanding of the key features of the theories studied by presenting them with in-a-nutshell concision.

Also important to me was to train students to summarise the long presentations of their summative research papers and to substitute them with live PK presentations. A formative PK that would feed forward to the summative presentation assignment therefore seemed to me an appropriate way forward. Since the students would need to make several trial-and-error attempts – at the expense of considerable lecture time – to fine-tune their PKs, I thought of having the formative PK recorded on Moodle, so that the students could listen to themselves first and rehearse until they were able to adjust to the PK format the pitch, speed and tone of their voices. At the end of this experiment, I asked students to evaluate their experience in doing the PK assignment and their attitudes toward it through a twelve-question questionnaire and two open-ended questions. Quantification of the results pinpointed numerous positive outcomes for the students. This paper seeks to prove that the PK is an innovative and interesting pedagogical tool which,in addition to providing students with a multiplicity of skills, can also enhance breadth of learning – especially in courses such as HET that require students to understand and study many theories in a constrained time period.

2. Evaluating the application of PK in higher education: A review of the literature

2.1. PK as a pedagogical tool

In recent years, many have criticised traditional PowerPoint presentations(PPTs) on several grounds (Jobs,S., as cited in Isaacson, 2011; Thompson, 2003; Tufte, 2003), though the most widely known condemnation was by Garber (2001), who accused them of delivering "*Death by PowerPoint*" to the audience in the form of poorly structured, lengthy and boring presentations. PKs, as one means of overcoming such criticism, have since been gradually penetrating both business and academic arenas. According to Anderson and Williams (2012), who employed PKs in three of their graduate and undergraduate management courses, PK made communication strategies – an integral skill of business students – both sticky and lean. As audience, students felt that PKs were more interesting than PPTs. Asked whether they would use PK in future presentations, seventy-five per cent of the undergraduate students said that they would. However, despite their positive responses, students also reported some negative aspects of PK, like not being able to go into important details, spending too much time on practising and having to learn the slides by heart.

PK assignments have been found to improve students' knowledge of course content, in both undergraduate (McDonald and Derby, 2015) and postgraduate (Levin and Peterson, 2013) modules.

Furthermore, PK was found to enhance English language competency. In an Asian international college offering a variety of courses related to business administration in English, students reported that PK enhanced their self-confidence, improved their English through practising and stimulated them to think creatively about the topic and learn more about it. The impact of PK in enhancing English language skills for foreign students was underscored by Zharkynbekova *et al.* (2017). Such other positive outcomes as raising awareness of the importance of visual aids,

timing and building presenter confidence were also reported in courses for teaching business students English for Academic Purposes(Robinson, 2015).

In a group of studies done on engineering students, PKs were found to enhance students' skills in designing, an important graduate attribute. According to Gries and Brooke (2010),PK has revived the role of PowerPoint in the world of design, as it has made students not only writers but also designers, an outcome also emphasised by Eriksen *et al.*(2011). However, having assigned a PK presentation to first-year engineering students, Swathipatnaik and Davidson (2016) concluded that, while most students liked the PK exercise, only thirty per cent of the students performed quite well, forty per cent displayed average performance and the remainder were poor. The most common complaint was that they could not finish each slide in twenty seconds. Nevertheless, the authors recognised increased presentation practice. Finally, results were less certain about whether or not PKs – when compared to PPTs – enhanced students' retention levels(Beyer *et al.*, 2012; Freeman, 2016).

2.2. Formative assessments in theory and practice

Aside from being a PK, my assignment was also a formative one. Although Bloom (1969) was not the first to use the concept of 'formative assessment'[4], he was probably the first to use the term to mean corrective feedback provided to students at each stage of the learning process as distinguished from summative assessment, which is used to assess what the students have learnt by the end of a programme or course. While formative assessment has been criticised by some scholars as not being underpinned by theory, Moeed (2015) believes that many facets of formative assessment are already based on a number of learning theories, such as cognitive theory, constructivism, socio-cultural theory, behaviorism and social constructivism.

According to Bennett (2011), most empirical studies support the evidence that formative assessment – if done correctly – can facilitate learning; however, such studies also pinpoint the fact that benefits of formative assessment differ according to kind and across different cohorts. In fact, Black and Wiliam (2009, p.8, as cited in Asghar, 2012) identify five main strategies for formative assessment.

Formative assessment has risen in importance over the last few decades at the expense of summative assessment (Black and Wiliam 2003; Guskey 2005). Gradually, summative assessment came to be perceived, unintentionally, in the literature as bad, while formative was seen as good (Lau, 2016).Higgins *et al.* (2002), for example, defend formative assessment on the basis of the positive effects it brings to learning and disagree that students are motivated to learn only by marks. Nevertheless, Barnett, (2007, as cited in Lau, 2016) believes that educators should resist putting all weight on formative assessment, as, while it might be more open-ended relative to the confining nature of summative assessment, the latter has the power of authenticity and motivation. Such opinion was earlier supported by Biggs (1998), who asserts that formative and summative assessment should be *complementary* – rather than mutually exclusive – in enhancing students' learning.

2.3. PK as a formative assessment

PK as a *formative assessment* was employed in two previous studies in disciplines other than economics. Smith (2013) applied PK to her own teaching for the Postgraduate Certificate in Higher Education (PGCertHE) related to the topic of learning theories. As her cohort was split into eight groups - four face-to-face groups for students studying in the UK and four online ones targeting students in transnational programmes - the face-to-face groups presented live while the online groups uploaded their PKs on Moodle. While students liked the PK, describing it as an interesting way to gain insight into complex issues and to identify only the fundamental aspects of the topic, they nevertheless complained that PKs were time-consuming, besides being constrained by their structure. It might be questioned here whether the live PK or the recorded PK is preferable. Since PK is a mode of presentation that assesses the students' presentation skills when facing a real audience, the answer would be the live PK. However, recorded PK via Moodle – especially if it is formative assessment, as in my case– can be extremely beneficial in training students to adjust their final live PKs. Furthermore, recorded PKs can be advantageous in transnational education or MOOCs when live PKs are not feasible – as in Smith's case.

Hirst's (2016) more recent study of two formative PK assignments done within two undergraduate modules suggests that there was some disparity between the respective perceptions of students and staff of the purpose of the formative assessment. His study highlights that the formative assessment can be a supportive mechanism for learning rather than being an indication or proof of learning.

3. Methodology: How I assigned a formative PK assignment in a history of economics course

I first decided to assign a PK formative assignment to my Development of Economic Thought II class in spring 2018. Assessment in this course consisted of three summative assessments: a mid-term exam weighing twenty per cent of the total mark, a final exam weighing forty per cent and a research paper accounting for the remaining forty per cent. While learning at a deep level entails students in exploring deeply one concept or theory and testing it through their summative research papers, the evaluation and criticism of different economic theories and models are assessed through summative examinations. However, through studying all economic theories in detail, students might sometimes miss the basic essence or the main tenets of each theory. To overcome this issue and link all parts of the story of economics together in a nutshell, I assigned this PK formative assignment. Besides, a PK can also instil life and a sense of joy through exciting images in a course that tackles mostly dead economists (especially in part I) and can feed forward to the students' summative assessments: the exams and the research paper.

I started the preparation of the formative PK before the semester began by allocating ten schools of economic thought to ten groups and cited these schools in a table in the module guidelines.I also included links to the main PK website which offers demos and exemplars of PK. On the first day of classes, I showed the students a demo about how to make a PK. Instead presenting their PK in class, I asked students, to record the voice accompanying each slide and

upload the PK file to Moodle. I did not provide a rubric for this assignment in the first semester of application. Nevertheless, in the subsequent semester, when I applied this formative assessment for the second time, I provided additional instructions and a rubric to clarify to the students what constitutes a *good* PK.

To overcome the problem mentioned by Eriksen *et al.* (2011), about not giving scope for discussion by examiners and peers, I required students to upload their PK to Moodle and comment on two other PKs. The PK group members would then respond to the comments. In this way, I could instigate an online discussion, thereby encouraging peer assessment. Finally, a two-week deadline from the start of the semester was provided to the students.

4. Results and discussion

4.1. Instructor's view

From my perspective, I believe that the PK assignment was successful in achieving a number of desired outcomes:

4.1.1. Outcome 1: Improving the breadth and not only the depth of learning

One of my prime objectives in assigning this PK formative assignment was to engage my undergraduate students in grasping the main tenets of each theory, so that deep learning through class lectures would not come at the expense of a broad understanding of the overall tenets of each theory and of how the ideas and concepts of the different evolving schools of economic thought are linked together. As far as this aim is concerned, I feel that I have successfully achieved my objective. As I proceeded through the semester, explaining new theories each week, some students would excitedly comment at the beginning of a new one: "This is my theory!" I feel that my PK assignment has achieved what sometimes flipped classrooms fail to do, as, in the latter case, many students come to class without having read the assigned material.

4.1.2. Outcome 2: Engaging with new technologies

Technology is swiftly changing the face of education as technology-related activities are increasingly being incorporated into the teaching and learning activities (Conference Board of Canada, 2014, cited in Bates, 2015).While students are accustomed to using PPTs, most are unaware of new software and technologies that enhance presentations – for example, Powtoon, Vyoud, Infographics and many others. One of my objectives was to engage students with these new technologies, from familiarity with which they can benefit in their future jobs.

4.1.3. Outcome 3: Benefiting from students' multiple skills (not only essay writing)

Most coursework assignments depend on essay writing and traditional presentations. Notwithstanding the importance of essay writing, especially in the economics discipline, many students may be competent in other skills, such as designing artful presentations. By assigning

this PK, I was providing new opportunities for enhancing students' graduate skills, such as creativity, professional skills, communication skills and teamwork (Biggs and Tang, 2011).

4.1.4. Outcome 4: Shortening the long history of economics through the brevity of PK

Since a PK is six minutes forty seconds long, then ten theories of economic thought discussed in detail throughout the whole semester can be briefly reviewed in slightly more than one hour. A summary of the 2000+-year-long history of economics from Greek philosophers to contemporary economic schools (studied through two semesters across the year) can be reviewed in little more than two hours. This guarantees that students retain the main characteristics of each theory even after graduation.

4.1.5. Outcome 5: Engaging students in collaborative work

Traditional methodology in group assignments leaves it to the students to select their partners in group projects. In most cases, partners are friends who work smoothly with each other. Unfortunately, this situation rarely exists when students are employed and are forced to work with other less friendly and/or less cooperative colleagues. To prepare students for such a situation and acquire team-work graduate skills (Biggs and Tang, 2011), I allocated students randomly in five-member groups.

4.1.6. Outcome 6: PKs are fun, attractive and can bring dead economists alive

As the vast majority of the economists whom I discuss in class in the two-semester history of economic thought courses I teach are actually dead, PK, with its artistic and creative designs, appeals to students[4] and brings dead economists alive again. This helps in engaging students to achieve the course's learning outcomes, currently a prime objective in higher education (Biggs and Tang, 2011).

4.2. Students' views

4.2.1. Designing the questionnaire

In order to quantify students' attitudes toward the PK assignment, I distributed a twelve-question questionnaire to my students in the Development of Economic Thought II in the spring semester of 2018, and those in Development of Economic Thought I in the fall semester of 2018. Twenty-nine students responded in the first class while twenty-two students responded in the second (making the total number of observations equal to fifty-one) by choosing from five possible choices: strongly agree, agree, undecided, disagree and strongly disagree. Each response was given a code starting from 5 (strongly agree) to 1 (strongly disagree).

4.2.2. Results of the questionnaire

Table 1 summarises the results of the questionnaires distributed in the two classes. As evident from the table, question 1 (which asked the students whether or not the PK had improved the

students' understanding of the theory by presenting it in a nutshell) had the highest average score (4.55). This aligned with what I previously mentioned in outcome 1. In fact, the percentage of students who strongly agreed and agreed on this question amounted to 96%. It is worth noting that this question scored the lowest standard deviation in all questions attesting to how all students did not differ much in that respect. Question 10 (which asked students whether the PK had enhanced their summarising ability) recorded the second highest score (4.33), with nearly 94% of the students agreeing or strongly agreeing, while question 8 (which asked students whether PK provided a fun learning environment) had the third highest score (4.26). For this question, the percentage of students who strongly agreed and agreed amounted to 84%.

On the other hand, the lowest score (3.55) went to question 3 (which asked students whether PK had enhanced the students' learning by learning *with* each other) recorded the lowest score (3.55) with a percentage of agreement of 61% signifying the difficulty some students find in collaborative work, and especially with the case of the existence of free-riders. Question 12 (which asked students whether or not they would like PK to replace PPTs) recorded the second lowest score (3.73) with nearly 67% agreeing. Furthermore, this question scored the highest standard deviation (1.40) among all questions, denoting how students' opinions differed widely in that respect.

Table 1: Attitudes toward PK formative assignment uploaded on Moodle

Question	Response	No.	Percentage	Average	Standard deviation
1. Do you agree that the PK improved my understanding of the theory by briefly presenting it in a nutshell (i.e. brief form)?	Strongly agree	30	58.82	4.55	0.58
	Agree	19	37.26		
	Undecided	2	3.92		
	Disagree	-	-		
	Strongly Disagree	-	-		
2. Do you agree that the PK raised my interest in the theory and encouraged me to read more about it?	Strongly agree	10	19.61	3.96	0.69
	Agree	30	58.82		
	Undecided	10	19.61		
	Disagree	1	1.96		
	Strongly Disagree	-	-		
3. Do you agree that the PK enhanced my group learning through learning with other students?	Strongly agree	9	17.65	3.55	1.08
	Agree	22	43.14		
	Undecided	10	19.61		
	Disagree	8	15.69		
	Strongly Disagree	2	3.92		

Question	Response	No.	Percentage	Average	Standard deviation
4. Do you agree that the PK enhanced my group learning through learning from other students?	Strongly agree	11	21.57	3.77	0.95
	Agree	23	45.10		
	Undecided	12	23.53		
	Disagree	4	7.84		
	Strongly Disagree	1	1.96		
5. Do you agree that a PK enhanced learning through new technologies that I was unaware of?	Strongly agree	23	45.10	4.18	0.95
	Agree	18	35.29		
	Undecided	7	13.73		
	Disagree	2	3.92		
	Strongly Disagree	1	1.96		
6. Do you agree that a PK improved my English speaking skills by letting me hear my own voice and rehearsing reading the text until perfection?	Strongly agree	18	35.29	4.04	0.92
	Agree	20	39.22		
	Undecided	11	21.57		
	Disagree	1	1.96		
	Strongly Disagree	1	1.96		
7. Do you agree that the PK improved my listening skills by making me listen to other PKs?	Strongly agree	14	27.45	3.98	0.84
	Agree	25	49.02		
	Undecided	9	17.65		
	Disagree	3	5.88		
	Strongly Disagree	0	0		
8. Do you agree that the PK provided a fun learning environment?	Strongly agree	24	47.06	4.26	0.87
	Agree	19	37.26		
	Undecided	5	9.80		
	Disagree	3	5.88		
	Strongly Disagree	-			
9. Do you agree that the PK enhanced my self-confidence and talking in front of people?	Strongly agree	17	33.33	3.84	1.01
	Agree	14	27.45		
	Undecided	15	29.41		
	Disagree	5	9.80		
	Strongly Disagree	-			

Question	Response	No.	Percentage	Average	Standard deviation
10. Do you agree that the PK enhanced my summarising and abstracting skills?	Strongly agree	21	41.18	4.33	0.65
	Agree	27	52.94		
	Undecided	2	3.92		
	Disagree	1	1.96		
	Strongly Disagree	-			
11. Do you agree that the PK enhanced my reflective skills by critically evaluating other PKs?	Strongly agree	13	25.49	3.90	0.86
	Agree	23	45.10		
	Undecided	12	23.53		
	Disagree	3	5.88		
	Strongly Disagree	-			
12. Do you agree that the PK should be applied in other courses to replace face-to-face PPTs?	Strongly agree	21	41.18	3.73	1.40
	Agree	13	25.49		
	Undecided	4	7.84		
	Disagree	8	15.69		
	Strongly disagree	5	9.80		

Source: Survey conducted among students enrolled in my courses of *Development of Economic Thought II*in Spring 2018 and *Development of Economic Thought I* in Spring 2018. The average score for each question was calculated by going through each respondent's questionnaire and adding in the following codes: Strongly agree=5; Agree=4; Undecided=3; Disagree=2; Strongly disagree=1. Calculations done by the author.

Aggregating the students' responses to all twelve questions demonstrated the positive attitudes students felt toward the PK assignment in general, with nearly 76% of the questions receiving a strongly agree or agree response on a positive aspect of the PK (figure 1).

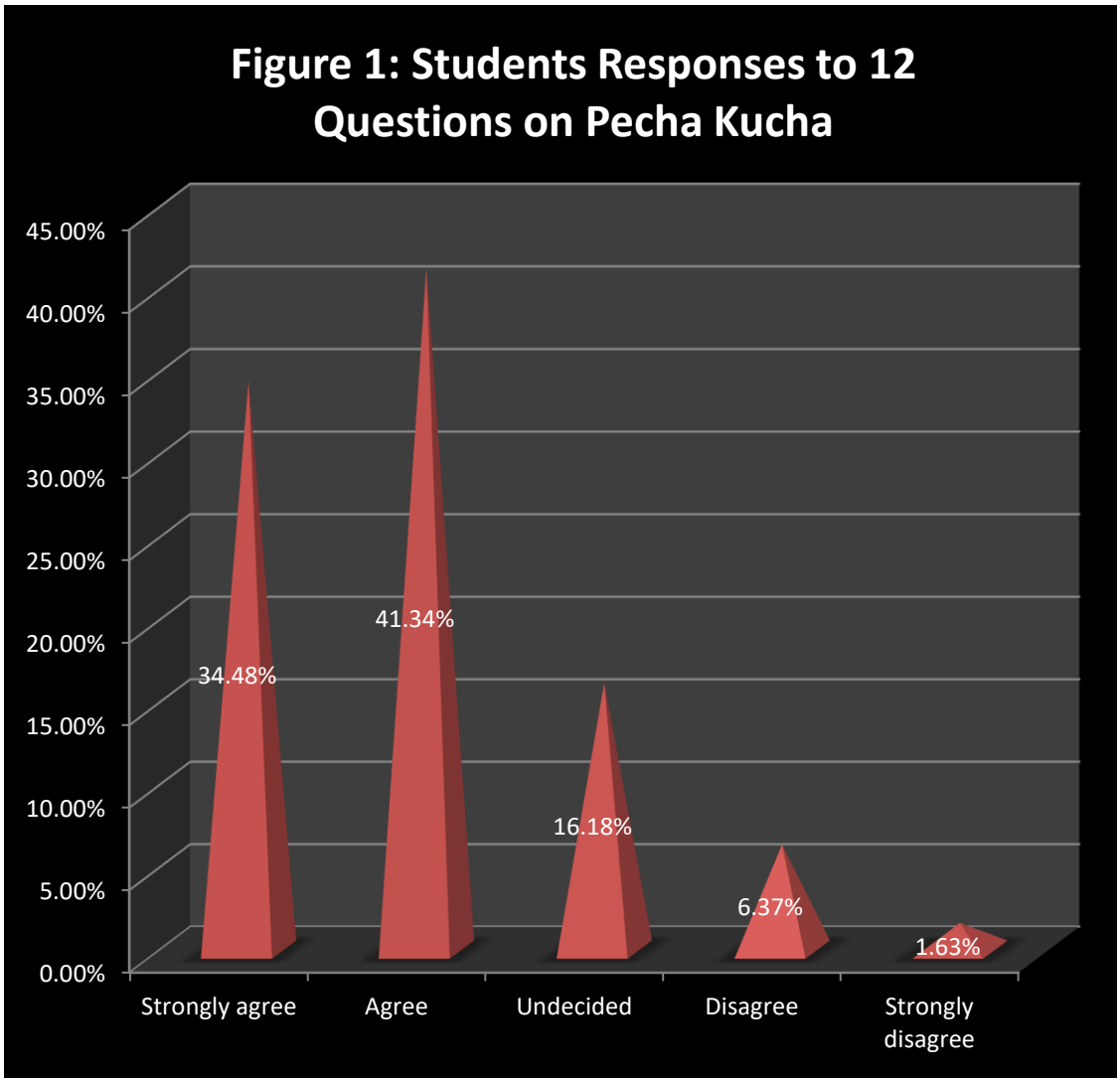

Figure 1: Students' Responses to 12 Questions on Pecha Kucha

Source: Survey conducted among students enrolled in my *Development of Economic Thought II class* during the Spring semester of 2018 and my *Development of Economic Thought I class* during the Fall semester of 2018. The average score for each question was calculated by going through each respondent's questionnaire and adding in the following codes: Strongly agree=5; Agree=4; Undecided=3; Disagree=2; Strongly disagree=1. The figure pertains to the total respondents' answers to all questions.

5. Conclusion

This paper charts my experiment in designing and allocating a formative PK assignment on one economic school of thought to groups of students in a HET class. Overall, students have responded positively to the PK assignment. As a pedagogical tool, the PK introduced the students to a new presentation style they were unaware of, enhanced their presentation and summarising skills, through practising, and their use of technology in learning; it was also, among many other advantages, fun. The study is thus is in line with previous studies on the benefits of PK, especially with respect to enhancing communication skills (Anderson and

Williams, 2012), comprehension (Levin and Peterson, 2013), English language through extensive practising (Zharkynbekova *et al*., 2017) and – most notable to me – their designing skills (Gries and Brooke, 2010; Eriksen *et al.*,2011).

Nevertheless, some students found the 'time and content' constraint challenging. Thus, only sixty-seven per cent of the students said that they would like it to replace PowerPoints in other courses, a percentage lower than that in Anderson and Williams's (2012) study (seventy-five per cent). However, I believe that the 'time and content' constraint is an advantage rather than a challenge, as it shifts these constraints from the instructor to the student. Tutors always face the challenge that students delve into excessive detail during presentations and consume much more time than the instructor intended to allocate to their presentations.

For me, the PK fulfilled most of the intended outcomes. My overall evaluation is that a PK proved to be a beneficial technological tool in learning, especially in courses where students have to learn many theories in a limited time. In that respect, PK can be applied in some – but not necessarily all –courses; for example, in mathematics courses, which may require students' understanding of long mathematical proofs, students might need more time – than the twenty seconds per slide – for them to comprehend, making PK-style presentation inappropriate. Although some of the PKs presented were outstanding, the fact that some PKs were deficient in the first semester the PK was applied may have resulted from my not having provided a rubric for this formative assessment, or from the fact that the formative assignment did not build, one way or another, to a summative one (Asghar, 2012), or simply because the assignment was formative. In the second semester of implementation, I decided to address the first two potential factors. First, I added a rubric which stated clear criteria for what constitutes a good PK. According to Panadero and Jonsson (2013), rubrics have the power to improve students' performance, as students can continuously check whether their progress conforms to the standards and review their work before submission. I also made this formative assignment feed forward more explicitly into their summative assignment by requiring that the presentation for the summative research paper be also in the form of PK rather than in traditional PPTs, yet live this time rather than being recorded. While this requirement had improved the students' formative PK, it made students' summative presentations markedly more engaging, the images more eye-catching and creative and the presentations precise and timely.

Instructors who are willing to apply the formative PK assignment (posted on Moodle forum or any other open source learning platform) in their classes could make use of the following guidelines:

1. Prepare a list of topics and insert them in a table, each topic in a separate box. These are the topics that you want your students to master during your course through performing a PK, and give each topic a group number.
2. When you receive the class list of students at the beginning of the semester and know exactly the number of students in your class, start assigning the names of five students haphazardly under each group in the table.
3. In the course handbook or guidelines, provide your students with the following:
   a) useful questions and a reading list that they can use in performing their PKs;

b) a rubric comprising the criteria that you will use for evaluating their formative PKs;
c) internet links on how to do a PK, exemplary of good PK and relevant online material needed for their PKs;
d) instructions on the maximum number of words accepted (if you do accept) per slide, so that students do not cram the slides with text;
e) instructions on the rules for peer review on Moodle.

4. Upload to Moodle the table comprising the groups of students and the course handbook.
5. Expand the maximum size of the Moodle forum to cope with the large file sizes of PK which comprise images and videos.
6. Assign deadline dates for students to post their PKs on Moodle forum and comment on their peers' PKs.

In the third semester witnessing my implementation of this PK assignment,students who had studied the first part of this module (and had done their first time PK) were studying the second part of this course and uploading their formative PK to Moodle. Since the same cohort was doing the PK exercise for the second consecutive semester, students were apparently more experienced in implementing this style of presentation. It is interesting to remember in a course which starts with the Greek philosophers what Aristotle (BC350) said in that respect: "For the things we have to learn before we can do them, we learn by doing them."

Notes

[1]According to the Pecha Kucha website http:/www.pechakucha.org/faq a *"PechaKucha 20x20 is a simple presentation format where you show 20 images, each for 20 seconds. The images advance automatically and you talk along to the images."* Accordingly, the total time a PK takes is six minutes and forty seconds.

[2]In the institution I work at, HET is studied in two consecutive courses – Development of Economic Thought I and Development of Economic Thought II – that run over the whole year. The courses mentioned in this paper were the Development of Economic Thought II, taught in the spring semester of 2018, and the Development of Economic Thought I, taught in the fall semester of 2018. My first experiment of the PK was in part II, while my second was in part I to a different cohort. During the writing of this paper, the same cohort which implemented it in part I in fall 2018 were implementing the PK assignment in part II on different schools in spring 2019.

[3]Most of the literature credits Scriven (1967) for being the first to introduce the term 'formative assessment'. Nevertheless, the term he used meant the evaluation of programmes or curriculums prior to their final assessment.

[4]I remember one group discussing the infant industry argument proposed by the German Historical School incorporated slides of two new-born babies. Their creativity was praised by their colleagues.

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